PART II Growth, Development, and Behavior

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AHMED TAWFIQ

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1. In embryonic period, all the following are true **EXCEPT**
   A. formation of blastocyst by 8 days
   B. formation of endoderm and ectoderm by 2 weeks
   C. formation of mesoderm by 6 weeks
   D. formation of human like embryo by 8 weeks
   E. the crown-rump length is about 3 cm

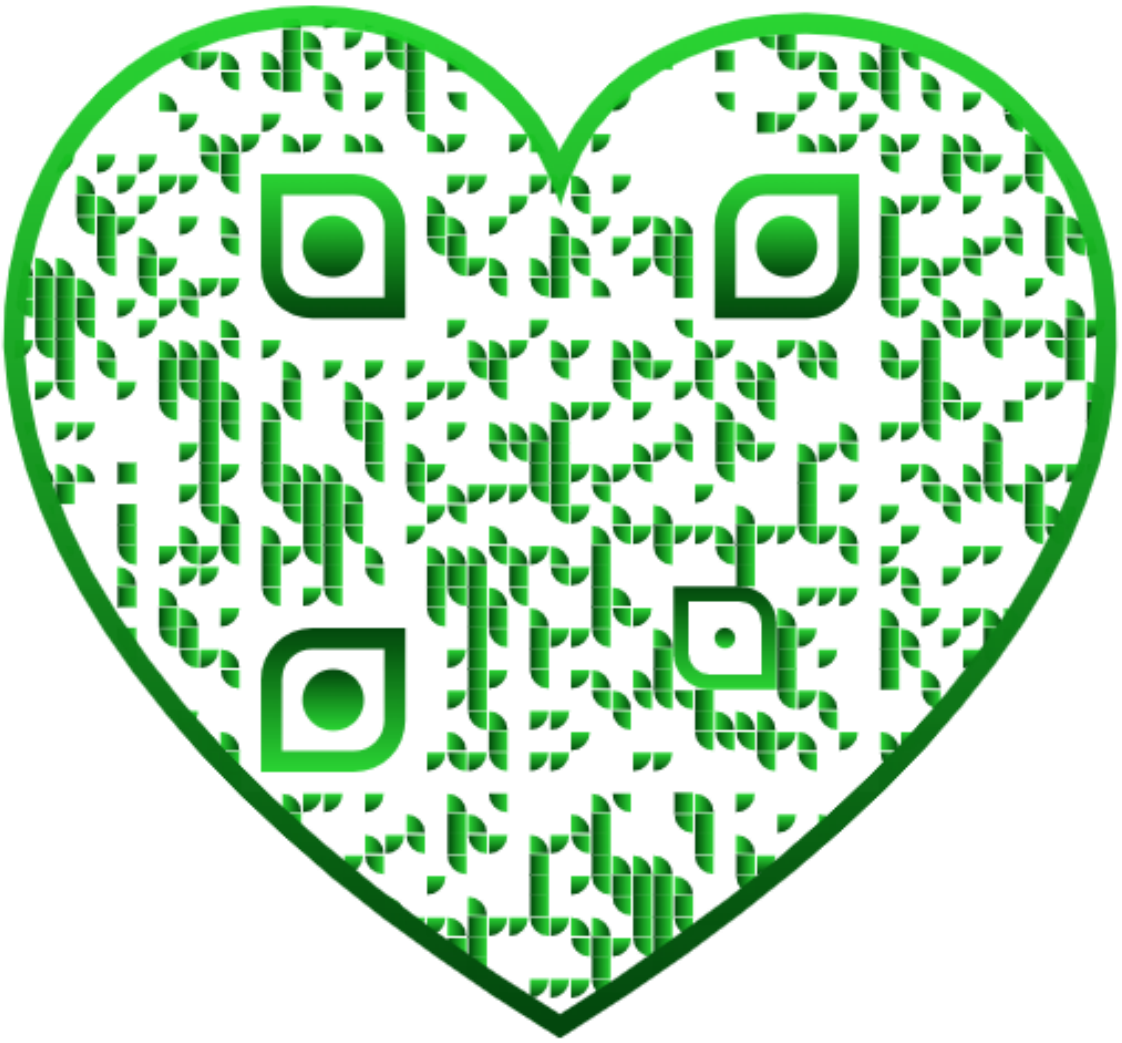
2. In fetal period, all the following are true **EXCEPT**
   A. by 10 weeks the midgut returns to abdomen
   B. by 12 weeks external genitalia becomes clearly distinguishable
   C. by 24 weeks surfactant production begun
   D. by 26 weeks recognizable human face formed
   E. during third trimester the weight triples

3. All the following are recognizable teratogens **EXCEPT**
   A. ethanol
   B. antiepileptic medications
   C. toxoplasmosis
   D. hypothermia
   E. mercury

4. Prenatal exposure to cigarette smoke is associated with
   A. lower birthweight
   B. shorter length
   C. changes in neonatal neurodevelopmental status
   D. neonatal diabetes
   E. learning problems

5. A 16-year-old G_1P_1 mother complaining of reduced milk production and breasts engorgement. She stated that she feels unhappy and scared most of the times. Her husband is a soldier and she is living with his family.
Of the following, the **MOST** appropriate action is to
   A. refer her to obstetrician
   B. explain the appropriate way of milk expression
   C. advice milk stimulant medications
   D. apply Edinburgh postnatal scale

Edinburgh Postnatal Depression Scale is the standard to apply; if the score achieved, the mother should be referred to psychiatrist.



E. stop breast feeding

6. A mother of a 2-week-fullterm baby noted doll's-eye movement of her baby eyes. Of the following, The **MOST** appropriate next action is to

A. reassures her by informing her that, this is a normal reaction
B. refer the baby to an ophthalmologist
C. takes a detailed history of perinatal period
D. order brain ultrasound
E. order brain MRI

7. The age at which the infant achieve early head control with bobbing motion when pulled to sit is

Real head control at 4 mo

A. 2 mo
B. 3 mo
C. 4 mo
D. 5 mo
E. 6 mo

8. The age at which the infant can reach an object, grasp it and bring it to mouth and seems exited when see the food is

A. 4 mo
B. 5 mo
C. 6 mo
D. 7 mo
E. 8 mo

9. By the age of 7 months the infant is able to do all the following **EXCEPT**

A. transfer object from hand to hand
B. bounces actively
C. cruises
D. grasp uses radial palm
E. roll over

Cruises or walks' holding to furniture is by 10 months of age.

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10. You are specialist explaining the developmental implication of a 6-month-old baby boy who "transfers object hand to hand" to college students.
Of the following, the **BEST** statement describing that is a/an

A. visuomotor coordination
B. voluntary release
C. comparison of objects
D. ability to explore small objects
E. increasing autonomy

11. Building a tower of 6 cubes by a 22-month-old child requires
   A. visualmotor coordination
   B. ability uses objects in combination
   C. visual, gross, and fine motor coordination
   D. able to link actions to solve problems
   E. symbolic thought

12. A 10-month-old child can do all the following **EXCEPT**
   A. follows one-step command without gesture
   B. says “mama” or “dada”
   C. points to objects
   D. speaks first real word
   E. inhibition to "no"

13. You are observing a 15-month-old toddler, he was able to do all the following **EXCEPT**
   A. walks alone
   B. makes tower of 3 cubes
   C. inserts raisin in a bottle
   D. responds to his/her name
   E. identifies 1 or more parts of body

14. The age by which the child can makes tower of 9 cubes and imitates circular stroke is
   A. 24 mo
   B. 30 mo
   C. 36 mo
   D. 42 mo
   E. 48 mo

15. The child who continue to search for a hidden subject, has achieved the developmental age of
   A. 7 mo
   B. 9 mo
   C. 11 mo
   D. 13 mo
   E. 15 mo

16. The child who's able to stands momentarily on 1 foot, makes tower of 10 cubes; imitates construction of “bridge” of 3 cubes; copies circle and imitates cross is
   A. 24 mo old
   B. 30 mo old

C. 36 mo old
D. 42 mo old
E. 48 mo old

17. A mother to a 4-year-old child who has pauses and repetitions of initial sounds visited outpatients department.
Of the following, the **MOST** appropriate advice is
A. this is a normal phenomenon affecting about 5% of preschool children
B. there is no need for action as 80% of affected children recover by their own
C. tries to reduce pressures associated with speaking
D. I'll refer him to ENT specialist for further evaluation
E. I'll refer him to speech therapist

18. These facts are true regarding the developmental stage of preschool children **EXCEPT**
A. handedness is achieved by 3 years of age
B. boys are usually later than girls in achieving bladder control
C. knowing gender by 4 years
D. egocentric thinking
E. musturbation

19. A worried mother of a 4-year-old boy describing attacks of inconsolable crying episodes of her child, taking long time, she stated also that he prefers to play alone.
Of the following, the **MOST** appropriate action is to
A. reassures her that this is a normal phenomenon of temper tantrum
B. seek more history regarding other skills and developmental domains
C. refer her to pediatric psychiatry
D. investigate social issues of the family
E. investigate for the child abuse

20. A young couples of a 2-month-old baby girl with excessive crying seek your medical advice. Mother said that the baby is crying about 3 hr in a day, 2-3 days per week. She is intermittently spitting but she is gaining weight adequately. She is bottle fed baby.
Of the following, the **LEAST** important advice is to
A. master the situation in relaxed manner
B. adhere to precry cues
C. change milk formula
D. avoid sensory overstimulation
E. reassure about benign nature of illness

21. Of those babies who have prolonged crying episodes in the first 2 mo of life, the percentage that will remain having similar episodes is about

A. 1%
B. 5%
C. 10%
D. 30%
E. 50%

22. A medical student asked you during the morning round about his observation of infants cry in response to the cry of another infant.
Of the following, the **MOST** appropriate answer is that it represent

A. an early sign of empathy development
B. a sign of good hearing
C. a startle reflex to a loud sound
D. an early sign of fear development
E. an early sign of autistic behavior

23. Between 2-6 months of life, the infant start to achieve a regular sleep–wake cycles.
All the following are true about infant sleep during this period **EXCEPT**

A. total sleep hours are about 14-16 hr/24 hr
B. sleeps about 9-10 hr concentrated at night
C. sleeps 2 naps/day
D. sleep electroencephalogram shows the mature pattern
E. the sleep cycle time is similar to that of adults

24. A highly careful mother of a 10-month-old baby boy complaining that her baby has inadequate weight gain. She explained to you how she is so strict and so careful to feed her baby by spoon, but he was always refusing.
Of the following, the **LEAST** helpful advice is to

A. respect infant independence
B. offer softer diet
C. use 2-spoons (1 for the child and 1 for the parent)
D. use finger foods
E. use high chair with tray table

25. The child who helps to undress; puts 3 words together (subject, verb, object); and handles spoon well, his/her **MOST** appropriate age is around

A. 15 mo
B. 18 mo
C. 24 mo
D. 30 mo
E. 48 mo

26. The child who plays simple games (in "parallel" with other children); helps in dressing and washes hands, his/her **MOST** appropriate developmental age is around

A. 15 mo
B. 18 mo
C. 24 mo
D. 30 mo
E. 48 mo

27. The child who is able to imitates construction of "gate" of 5 cubes; draws a man with 2-4 parts besides head and identifies longer of 2 lines, his/her **MOST** appropriate developmental age is around

A. 24 mo
B. 30 mo
C. 48 mo
D. 54 mo
E. 60 mo

28. The birthweight usually quadruples by the age of

A. 1.5 yr
B. 2 yr
C. 2.5 yr
D. 3 yr
E. 3.5 yr

29. Regarding the physical growth of preschool children (3-5 yr); all the following are true **EXCEPT**

A. 4-5 kg weight increment/yr
B. 7-8 cm height increment/yr
C. head will grow only an additional 5-6 cm up to18 yr
D. all 20 primary teeth have erupted by 3 yr
E. average wt 20 kg and height 40 inch by 4 yr

30. Regarding the physical growth of middle childhood (6-11 yr); all the following are true **EXCEPT**

A. 3-3.5 kg wt increment/yr
B. 6-7 cm height increment/yr
C. brain myelinization stops by 8 yr
D. first deciduous tooth falls by 6 yr
E. risk for future obesity

31. The first permanent tooth to erupt is

A. central incisor at 6 yr

B. molar at 6 yr
C. premolar at 6-7 yr
D. lower canine at 6-7 yr
E. upper canine at 6-7 yr

32. The following statements about sleep are true **EXCEPT**
A. melatonin which is secreted in dark-light cycles is secreted from hypothalamus
B. slow-wave sleep is the first cycle of sleep
C. rapid eye movement (REM) sleep is responsible for dreams
D. both cycles are needed for sufficient sleep
E. REM sleep protect brain from injury

33. The **MOST** common cause of sleeping difficulty in the first 2 months of life is
A. gastro-esophageal reflux
B. formula intolerance
C. colic
D. developmentally sleeping behavior
E. recurrent self resolving intussusceptions

34. A mother of 4-month-old baby boy complaining that the baby never goes to sleep unless he is rocked for quite long time. She needs to repeat the same issue whenever he is awake at night. She was surprised as no one of her previous babies had the similar behavior. She feels tired because of insufficient sleep.
Of the following, the **MOST** common cause of this baby problem is
A. an early signs of ADHD
B. behavioral insomnia of childhood, sleep-onset association
C. primary sleep disorder
D. restless legs syndrome
E. sleep terrors

35. Parents of a 4-year-old boy complaining that he is refusing to go to bed, he remains active and playing.
Of the following, the **MOST** likely cause of this child problem is
A. thyrotoxicosis
B. ADHD
C. primary sleep disorder
D. limit setting; behavioral insomnia of childhood
E. behavioral insomnia of childhood, sleep-onset association

36. All the following are included in basic principles of healthy sleep **EXCEPT**
A. set bedtime routine
B. avoid stimulating activities as playing computer games

C. makes sure your child spends time outside every day
D. gives a heavy meal within an hour or 2 of bedtime
E. keeps the television set out of your child's bedroom

37. All the following are compatible with the definition of obstructive sleep apnea **EXCEPT**
A. repeated episodes of prolonged upper airway obstruction
B. apnea
C. ≥30% reduction in airflow
D. ≥ 30% O2 desaturation
E. disrupted sleep

38. Of the following, the **MOST** common cause of obstructive sleep apnea in children is
A. adenotonsillar hypertrophy
B. obesity
C. allergies
D. craniofacial abnormalities
E. pharyngeal reactive edema due to gastroesophageal reflux

39. Persons with Down syndrome are at particularly high risk for obstructive sleep apnea with up to 70% prevalence.
All the following are considered as risk factors **EXCEPT**
A. peculiar facial anatomy
B. hypotonia
C. developmental delay
D. central adiposity
E. hypothyroidism

Macroglosia

40. All the following are parasomniac disorders **EXCEPT**
A. narcolepsy
B. sleepwalking
C. sleep terror
D. confusional arousal
E. nightmare

Narcolepsy is a recurrent episode of excessive daytime sleepiness, while parasomnia is an episodic nocturnal behavior that often involves cognitive disorientation and autonomic and skeletal muscle disturbance.

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PART II Growth, Development, and Behavior ANSWERS

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1.**(C).** Formation of mesoderm by 4 weeks.
2.**(D).** Usually by 10 weeks.
3.**(D).** Teratogens associated with gross physical and mental abnormalities include various infectious agents (toxoplasmosis, rubella, syphilis); chemical agents (mercury, thalidomide, antiepileptic medications, and ethanol), high temperature, and radiation.
4.**(D).** Prenatal exposure to cigarette smoke is associated with lower birthweight, shorter length, and smaller head circumference, as well as changes in neonatal neurodevelopmental assessments. Later, these children are at increased risk for learning problems, externalizing behavior disorders, and long-term health effects.
5.**(D).** Pediatricians must be alert to detect postpartum depression. Edinburgh Postnatal Depression Scale is the standard to apply; if the score achieved, the mother should be referred to psychiatrist.
6.**(A).** This is normal finding in neonatal period.
7.**(B).** This is a developmental skill of 3 months of age which include also; lifts head and chest with arms extended on prone; head above plane of body on ventral suspension; reaches toward and misses objects; waves at toy; listens to music and says “aah, ngah”.
8.**(A).** By this age he also able to lifts head and chest, with head in approximately vertical axis; achieve no head lag when pulled to sitting position, enjoys sitting with full truncal support when held erect, pushes with feet when sees raisin, but makes no move to reach for it, laughs out loud; and may show displeasure if social contact is broken.
9.**(C).** Cruises or walks’ holding to furniture is by 10 months of age.
10.**(C).** The developmental implication reflects cognitive development.
11.**(C).**
12.**(D).** This is a 12 months developmental skill.
13.**(E).** This is an 18 months developmental skill.
14.**(B).** A 30 months old child also able to goes up stairs alternating feet, makes vertical and horizontal strokes, refers to self by pronoun “I”; knows full name, helps put things away and pretends in play.
15.**(B).** A major milestone is the achievement by 9 mo of object permanence (constancy), the understanding that objects continue to exist, even when not seen. At 4-7 month of age, infants look down for ball that has been dropped but quickly give up if it is not seen. With object constancy, infants persist in searching. They will find objects hidden under a cloth or behind the examiner’s back.
16.**(C).**

17.**(C).** Developmental dysfluency or stuttering it includes a pauses and repetitions of initial sounds. Stress or excitement exacerbates these difficulties, which generally resolve on their own. Although 5% of preschool children will stutter, it will resolve in 80% of those children by age 8 yr. Children with stuttering should only be referred for evaluation if it is severe, persistent, or associated with anxiety, or if parental concern is elicited. The best response is to give guidance to parents to reduce pressures associated with speaking. Other statements can be used for reassurance and for explaining the natural history of the problem.

18.**(C).** Bowel and bladder control emerge during this period, with "readiness" for toileting having large individual and cultural variation. Bed-wetting is normal up to age 4 yr in girls and age 5 yr in boys. Thinking in this period characterized by magical thinking (the child might believe that people cause it to rain by carrying umbrellas, that the sun goes down because it is tired), and egocentrism which refers to a child's inability to take another's point of view. Gender identification usually achieved by 3 years of age. Curiosity about genitals and adult sexual organs is normal, as is masturbation. But excessive masturbation interfering with normal activity, acting out sexual intercourse, extreme modesty, or mimicry of adult seductive behavior all suggests the possibility of sexual abuse or inappropriate exposure**.**

19.**(B).** Classical temper tantrums of children usually result from fear, overtiredness, inconsistent expectations, or physical discomfort. Tantrums normally appear toward the end of the 1st yr of life and peak in prevalence between 2 and 4 years of age. Tantrums lasting more than 15 min or regularly occurring more than 3 times/day may reflect underlying medical, emotional, or social problems. In the scenario the episodes takes long time to resolve and the mother points to problem in social development. Here we need to investigate the developmental domains and to do systemic examination to checkout for any developmental/physical problem before referring the child to pediatric psychiatrist which the next most appropriate choice.

20.**(C).** Prolong crying episodes is present in about 20% of infants younger than 2 mo of age.Crying (longer than 3 hr/day, longer than 3 days/wk lasting longer than 1 wk) and more often crying/fussiness persisting longer than 3-5 mo might be associated with; child abuse; behavioral problems when an older child (anxiety, aggression, hyperactivity); decreased duration of breastfeeding and postnatal depression (uncertain which is the cause or effect). Most infants with crying/fussiness do not have gastroesophageal reflux, lactose intolerance, or cow-milk protein allergy.

21.**(B).**

22.**(A).**

23.**(E).** The sleep cycle remains shorter than in adults (50-60 min vs approximately 90 min). As a result, infants who arouses frequently during the night, considered as behavioral sleep problem.

24.**(B).** Poor weight gain at this age often reflects a struggle between an infant's emerging independence and parent's control of the feeding situation.

25.**(C).**

26.**(D).**
27.**(C).**
28.**(C).**
29.**(A).** 2kg/yr.
30.**(C).** Brain myelinization continues into adolescence, with peak gray matter at 12-14 yr.
31.**(B).** The first permanent molars usually erupt between ages 6 and 7 years. For that reason, they often are called the “six-year molars.” They are among the “extra” permanent teeth in that they don’t replace an existing primary tooth. These important teeth sometimes are mistaken for primary teeth. The six-year molars also help determine the shape of the lower face and affect the position and health of other permanent teeth. The first deciduous teeth to fall are central incisors.
32.**(A).** Melatonin is secreted from penile body. Two sleep cycles; the slow-wave sleep (SWS) (i.e., n3, delta, or deep sleep) appears to be the most restorative form of sleep; it is entered into relatively quickly after sleep onset, it is preserved in the face of reduced total sleep time, and it increases (rebounds) after a night of restricted sleep. Rapid eye movement (REM) sleep (stage r or “dream” sleep) appears to be involved in (1) completing vital cognitive functions, such as the consolidation of memory; (2) promoting the plasticity of the central nervous system (CNS); and (3) protecting the brain from injury.
33.**(D).** Most sleep issues that are perceived as problematic at this stage represent a discrepancy between parental expectations and developmentally appropriate sleep behaviors. Newborns that are noted by parents to be extremely fussy and persistently difficult to console are more likely to have one of the mentioned medical issues.
34.**(B).** In this situation, the child learns to fall asleep only under certain conditions or associations, which typically require parental presence, such as being rocked or fed, and does not develop the ability to self-soothe. In babies, gradually weaning the child from dependence, and in older children introduction of more appropriate sleep associations that will be readily available to the child during the night (transitional objects, such as a blanket or toy), in addition to positive reinforcement (i.e., stickers for remaining in bed), is often beneficial.
35.**(D).** Is often the result of parental difficulties in setting limits and managing behaviour in general, and the inability or unwillingness to set consistent bedtime rules and enforce a regular bedtime in particular.
36.**(D).** Other advices also include; don’t send your child to bed hungry. A light snack (such as milk and cookies) before bed is a good idea. Heavy meals within an hour or 2 of bedtime, however, may interfere with sleep. Avoid products containing caffeine for at least several hours before bedtime. These include caffeinated sodas, coffee, tea, and chocolate. Keep your child’s bedroom quiet and dark. A low-level night light is acceptable for children who find completely dark rooms frightening. Keep your child’s bedroom at a comfortable temperature during the night (<24°C). Don’t use your child’s

bedroom for time-out or punishment. Keep the television set out of your child's bedroom.

37.**(D).** ≥ 3% O2 desaturation.

38.**(A).**

39.**(C).** Macroglosia.

40.**(A).** Narcolepsy is a recurrent episode of excessive daytime sleepiness, while parasomnia is an episodic nocturnal behavior that often involves cognitive disorientation and autonomic and skeletal muscle disturbance.